

Therapeutic Effectiveness of a Gel Containing Culture Extract in Adjuvant Arthritis

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Annotation: Systemic inflammation in rheumatoid arthritis is accompanied by hyperplasia of synovial tissue, structural damage to tendons, bones, and ligaments. Until now, the etiology and pathogenesis of the disease is not completely clear, effective therapeutic agents have not been identified.

Keywords: hyperplasia, adjuvant arthritis, inflammatory process, polyarthritis, proliferation, chronic arthritis.

Since anti-inflammatory agents are widely used in rheumatism of the joints, there is a need to test their effect against experimental arthritis [1- 645]. One of the most reliable methods for this purpose is "adjuvant arthritis", the development of which does not depend on the sex of experimental animals, feeding environment and season. The experimental model on rats is distinguished by its reliability, the speed of development of the initial symptoms of arthritis and the development of polyarthritis manifestations, bone resorption, and increased proliferation in the affected area.

The purpose of the study. A comparative study of the therapeutic effect of an adjuvant arthritic treatment of an extract of agave extract in a preservative gel compared with ibuprofen gel.

Materials and research methods. Under the influence of ether-induced anesthesia, 0.1 ml of Freund's adjuvant was injected subcutaneously at the base of the tail of rats. The day of induction is marked with "O" and the following days are +1; +2; +3 and marked [5- 74]. Experimental animals were observed for 30 days from the day of induction. The paw size of the animals was measured using a plethysmometer before the start of the experiment and every 4 days from day +2. In addition, during the entire observation period, the number of injured paws and joints, the severity of injuries were calculated by points. The effect of the drugs was evaluated as a preventive effect after +14 days, and as a curative effect after +22 days.

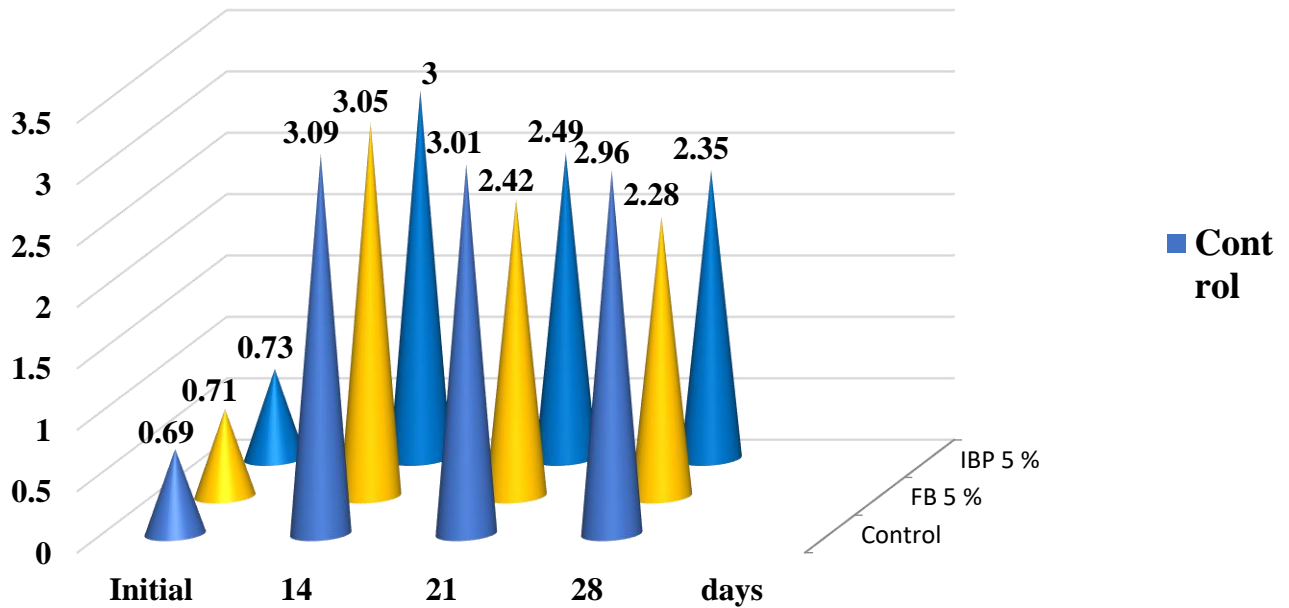
The obtained results and their analysis. The results of a separate series of experiments on the study of the adjuvant arthritis effect of the studied gels in therapeutic use showed that the size of the right hind paw (experimental) almost increased on the 14th day of the experiment. 3.5 times, and on the 21st day of the experiment, 3.4 times, and at the end of the experiment (28th day), the initial volume of the paw increased by 3.3 times.

At the same time, the size of the left hind paw increased by 50.6, 67.0, and 87.1%, respectively, during the indicated observation periods; Arthritis induced by Freund's adjuvant was very evident within 28 days. Conversely, a reduction in the inflammatory process was observed in rats treated with topical ibuprofen gel [4,5- 47, 75]. Thus, during the indicated periods of observation, the increase in the size of the hind right paw was 3.1, 2.4, and 2.2, respectively; We found almost similar changes in the group of animals treated with the gel containing the extract of fennel [9,7- 546, 324].

It is worth noting that under the influence of drugs, the inflammatory process in other joints, in particular, in the left hind leg, significantly decreased.

This statement is clearly confirmed in terms of anti-inflammatory activity of drugs. Thus, after 7 days of treatment with ibuprofen gel, its anti-inflammatory activity was 24.1%, and 26.3% in animals treated with a gel containing the extract of agarwood.

Study of the therapeutic effects of adjuvant arthritic treatment of adjuvant gels and ibuprofen gels.



A 2-fold increase in the duration of treatment led to an increase in the anti-inflammatory activity of the gels. It was 28.6% in animals treated with ibuprofen gel, and 31.0% in the gel with fennel extract.

A study of the therapeutic effects of a gel and ibuprofen gels containing the extract of the adjuvant arthritis.

Groups	Paw size, cm ³							
	Initial		14 days		21 days		28 days	
	Right paw	Left paw	Right paw	Left paw	Right paw	Left paw	Right paw	Left paw
Control	0,69±0,02	0,70±0,02	3,09±0,11 2,40±0,10	1,05±0,07 0,35±0,05	3,01±0,12 2,32±0,11	1,17±0,08 0,47±0,06	2,96±0,15 2,27±0,14	1,31±0,08 0,61±0,06
P			<0,001	<0,01	<0,001	<0,002	<0,001	<0,001
field bindweed - 5%	0,71±0,03	0,69±0,03	3,05±0,14 2,34±0,13	1,09±0,09 0,40±0,08	2,42±0,15 1,715±0,13	1,11±0,07 0,42±0,06	2,28±0,17 1,57±0,16	1,15±0,06 0,46±0,06
P			<0,001	<0,01	<0,001	<0,002	<0,001	<0,001
P₁			>0,05	>0,05	<0,02	>0,05	<0,05	>0,05
Ibuprofen - 5%	0,73±0,03	0,71±0,04	3,00±0,16 2,27±0,14	1,12±0,10 0,41±0,08	2,49±0,15 1,76±0,13	1,15±0,10 0,44±0,08	2,35±0,14 1,62±0,12	1,19±0,07 0,48±0,05
P			<0,001	<0,02	<0,001	<0,02	<0,001	<0,002
P₁			>0,05	>0,05	<0,05	>0,05	<0,02	>0,05

Summary

In a series of therapeutic experiments, the gel containing the extract of the primrose attenuated the development of chronic autoimmune inflammation induced by Freund's adjuvant.

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